



SECONDARY EDUCATION SOFTWARE

ICT is now a vital ingredient in classrooms around the country. Janet Swift investigates some of the best programs designed to help secondary school pupils become pass masters

Today's school students are growing up surrounded by computer technology. At secondary level they use word processors, spreadsheets and databases in the course of their lessons and homework and have access to digital cameras, scanners and colour printers for collaborative projects. All these items are everyday tools and can be largely taken for granted. Software has two other roles to play: as a library of resources to supplement books, and as a subject specialist that delivers expert lessons.

Computer technology such as slideshows and whiteboards provides a way of preserving material

in a way that blackboard and chalk never could. One of the goals for ICT in education is to enable teachers to share best practice. The idea is that today's teachers don't need to start from scratch every time they teach a topic to a group of students. Instead they can build on existing lesson plans that they and their colleagues, even those from other schools, have already developed.

Given that the same curriculum is being delivered nationwide, there is obviously scope for commercial companies to sell material for use in the classroom. A school software budget therefore has to purchase not only educational tools but also

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educational content. Teachers, particularly in science, cannot reasonably be expected to have knowledge that encompasses the entire curriculum.

Some of the titles reviewed here are tools, some are content – and to get a top rating they must combine both aspects. On the whole they are designed by and for teachers and are not suitable for independent learners. This is partly on the grounds of cost, but also because they need on-the-spot teacher input and are not intended to be standalone products. The titles on page 191, however, would be as useful at home as in the classroom and offer fun as a vital ingredient.

REVIEW EDUCATION SOFTWARE

PLATO LEARNING Multimedia Science School 2.0

RATING ★★★★★

PRICE Schools £4,375 ex VAT

SUPPLIER Plato Learning 08704 441232

DETAILS www.platolearning.co.uk

Multimedia Science School is a collection of animations, simulations, databases and video clips. It can be used by teachers or by pupils working individually or in small groups supervised by a teacher. It is also suitable for independent self-study for catching up on missed lessons, revision or taking a topic further.

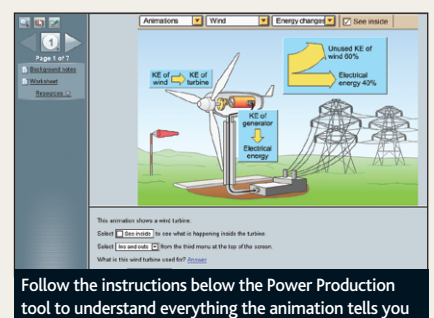
Although it's supplied on a single CD, version 2 has been expanded and contains 45 teaching tools spanning the entire science curriculum at Key Stages 3 and 4 (ages 13 to 16). It is possible to buy modules separately but it's cheaper to buy the complete set – the price includes a full site licence and there are no recurrent charges.

Each tool has a Getting to Know presentation that acts as the teacher's introduction to the

resource and at least one pre-prepared lesson. Lessons are supplied with two Microsoft Word documents. The Background notes are primarily for teachers and contain an overview of the lesson, including an estimate of how much time to allow, together with its learning objectives and teaching tips. The pupils' worksheets contain questions for them to answer and refers them to the specific slides they need to use. Another enhancement in the updated version is the Lesson Builder, which lets teachers create their own lessons from scratch based on the supplied material.

Due to the range of topics covered the slideshow lessons are all very different. However, they all tie in closely to the curriculum and make good use of interaction to play animations and reveal additional information using graphics. Each comes with clear instructions, and the well-presented interface and intuitive navigation system give easy access to the varied facilities for interactive exploration. Lessons have interactive questions with pop-up answers, and utilities such as histograms, line graphs and scatterplots are provided so that students can record and present the results of experiments.

The Resource Tree organises the content into three categories: Biology, with topics including photosynthesis, the digestive system, diet and



inheritance; Chemistry, where you explore Earth and the atmosphere, atoms, the periodic table, rates of reaction and Haber process; and Physics, with simulators for exploring terminal velocity, the electromagnetic spectrum and wave behaviour plus a Planet Analyser. Our rating reflects the quality of the content as well as its wide variety.



Provides flexible opportunities for teachers



Much too expensive for home use

REQUIREMENTS Windows 95/98/Me/NT/2000/XP, Pentium III processor, 128MB RAM



REVIEW EDUCATION SOFTWARE

PLATO LEARNING

Multimedia Mathematics School 1.0

RATING ★★★★★

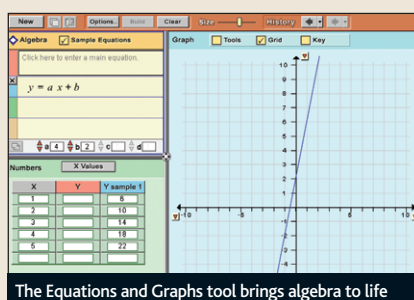
PRICE Schools £400 ex VAT

SUPPLIER Plato Learning 08704 441232

DETAILS www.platolearning.co.uk

The three tools in the Multimedia Mathematics School – equations and graphs, simultaneous equations and working with equations – can be purchased separately, but it is more economical to buy them as a package. They are designed for use on a whiteboard or for small group or individual use. Each of the tools is well implemented and allows maths teachers to use the supplied material and develop their own lessons. Teachers can also take advantage of a randomiser that produces examples of student questions.

Each supplied lesson comes with a worksheet and teachers' notes. The lesson demonstrating the use of the equations and graphs tool, for example, presents a series of slides that help students understand the roles of m and c in the equation $y=mx+c$ and their effect on the graph of the



The Equations and Graphs tool brings algebra to life

equation. Students are asked to plot a graph as if they were using paper and further graphs are drawn automatically.

Various challenges are offered at the end of the worksheets in the form of images of graph axes, each with four graphs already drawn, which students can attempt to replicate using the program. We've given this software a high rating on the grounds that its interactivity will really help students master the areas it covers.



Visual interactive tools to aid maths teaching



Few exemplar lessons supplied

REQUIREMENTS Windows 95/98/Me/NT/2000/XP, Pentium II processor, 32MB RAM

REVIEW EDUCATION SOFTWARE

TOPOLOGIKA

MathMania/WordMania

RATING ★★★★★

PRICE Schools from £49 ex VAT; Home

Edition £25 inc VAT

SUPPLIER Topologika 01326 377771

DETAILS www.topologika.com

Titles in the Key Stage 3 Mania series provide a motivating environment for developing pupils' skills in key subjects. We looked at the maths and literacy programs, which are already available and will soon be joined by science and ITC titles.

This software lets users play maze games in single- and multi-player mode, over a network or the internet. Although the idea may be to gain high scores using speed and strategy, the only way to achieve this is to answer questions correctly. Sets of questions are supplied and teachers can also add custom questions of their own. The software can track players' answers and print them, and can promote or demote pupils to a different difficulty level.

To start a game, players select a topic and one of four styles of maze. In WordMania the choices are spelling and vocabulary, punctuation and grammar, use of English and comprehension. MathMania includes numbers, time and money, measurements, angles and shape and space. Both titles also offer a lucky dip category. Each topic includes three difficulty levels linked to National Strategy Objectives.

The obstacles encountered during play increase the fun. In this case there are Question Bombs launched by other players, Question Monsters, which ask questions, and Question Munchers, which provide question immunity.

Additional puzzles are also included. The literacy extras include word searches, sliding blocks, hangman and Nibbles, in which players collect words for a snake that gets longer and faster. For maths there are eight extra options, including magic squares, sliding blocks, towers of Hanoi and puzzles concerning weight and coins.

The Home Editions of the program have all the benefits of the classroom versions, including worksheets, and offer enough fun to make them worthwhile for practice at home.

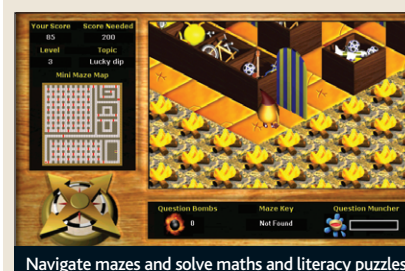


Turns numeracy and literacy into a competitive sport



Limited variety of main activities

REQUIREMENTS Windows 95/98/Me/2000/XP, 200MHz Pentium processor, 64MB RAM, DirectX



Navigate mazes and solve maths and literacy puzzles

REVIEW EDUCATION SOFTWARE

NEPTUNE

COMPUTER TECHNOLOGY

River Focus

RATING ★★★★★

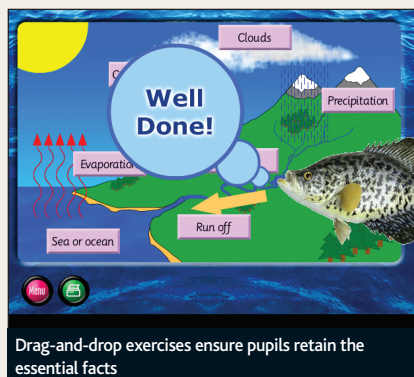
PRICE Schools from £41 inc VAT

SUPPLIER Neptune Computer Technology 01935 891892

DETAILS www.neptunet.co.uk

This geography title spans Key Stages 2 and 3. Its main topics are the water cycle, the way in which rivers shape the landscape and their economic importance. Presentations have well-drawn animations and narration, which is clear without sounding patronising. There is also an option to view the narrative text and, at several points, pupils can click on an icon for additional material in a pop-up text box. There's a useful glossary and at the end of each major topic there's a summary and an activity to test pupils' understanding.

The modules in the package cover The River System, which explores a river from source to estuary with discussions of water speed and bank shape; River Landforms, which covers transportation, erosion and depositional processes and provides interactive exercises to ensure that pupils master important concepts; and Rivers of the World, which includes maps of the major rivers on each continent and a quiz to help remember them. It also looks at wildlife, with record cards on



Drag-and-drop exercises ensure pupils retain the essential facts

different creatures that live in rivers around the world. The section Rivers and Everyday Life has nine topics including water extraction, hydro-electric power and salmon farming.

The title is supported by additional activities including word searches, a scrapbook facility that enables pupils to combine pictures with their own text and printable worksheets. There are no corresponding answer sheets – presumably on the grounds that teachers don't need them and pupils can find all the information needed within the program.



Variety of content reinforced by variety of activities



No answers to worksheet activities

REQUIREMENTS PC: Windows 95/98/Me/NT4/2000/XP, 166MHz Pentium processor, 16MB RAM. **Mac:** System 8.5 or higher, PowerPC or greater, 16MB RAM



REVIEW EDUCATION SOFTWARE

BIRCHFIELD Version 3 Series

RATING ★★☆☆

PRICE Schools £130 ex VAT

SUPPLIER Birchfield 029 2059 7000

DETAILS www.birchfield.co.uk

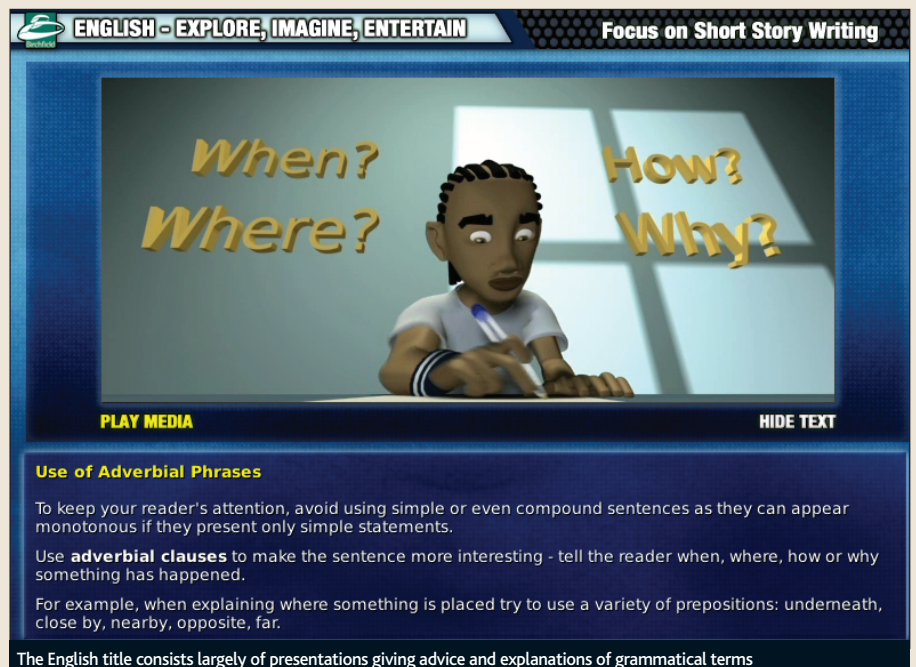
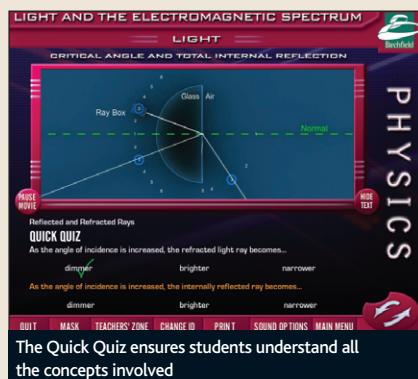
Birchfield has developed a comprehensive catalogue of secondary education software. We looked at five titles in its Version 3 series, covering English, PE, religious studies, physics and geography. Each title can be used by individual students or for classroom presentations using a whiteboard and shares a common format: multimedia content is supported by activities ranging from drag-and-drop exercises and quizzes to questions requiring written answers.

There are three CDs in each pack. It is possible to use the main Program disc on its own but teachers will welcome the inclusion of a Resource CD, which enables them to build the text, animations and voice-overs into presentation packages to create custom lessons and worksheets. The third CD, the Birchfield Assessment tool, can be used to track pupils' progress through the activities and produce graphs and charts of their results.

SEE THE LIGHT

We first looked at Light and the Electromagnetic Spectrum, the eighth title in the Physics ages 14-16 series. It is a highly polished presentation but at times the medium tends to interfere with the message. In introducing the way light behaves students are asked to manipulate the light source using a slider rather than the mouse, a constraint imposed by the software's design for whiteboard use. The angles at which the light met the surface of the glass were not indicated, which was disappointing, and worse still was the use of the same colour for both air and glass, making it difficult to distinguish between them.

We were also less than happy with the way in which feedback was reported to students. The graphic of the student's percentage score rotates on the screen, making it quite incomprehensible to any dyslexic pupil. The activities also include a Give up button, which has a dramatic effect. Not only do you see and hear the message, "Oh dear, you gave up," you also witness a robot crying copious tears. In a classroom situation the effect is likely to be demoralising rather than reassuring.



We were more impressed with the presentation of the next two titles: Hinduism, in the Religious Studies series, and Safety and Risk Assessment in the Physical Education series. Both are aimed at ages 14-16 as preparation for GCSE exams. The format suits the topics particularly well. The use of photographs and graphics aids understanding, and splitting the material into short chunks, followed by drag-and-drop activities to test retention, make it easy to absorb.

The quiz material is also appropriate for the topics. Each title includes three options in its quiz menu. One of the standard items is a word search where pupils have to find the words listed and answer a question each time one is successfully located. Another option is the Mega Quiz, which leads to compiling a video. As a reward for scoring 10 points you are allowed to choose images, after another 10 points you can select the sound and the final 10 points let you add titles. The third quiz in the Religious Studies and PE titles is a fairly simple selection game. It's less fun than the invaders game included in the Geography title below, but it's quick and to the point.

WHERE IN THE WORLD

Like the other programs, the Geography series includes an extended question zone with a list of questions for pupils to answer. At this point pupils

face a blank page on which they can type an answer. This has few of the facilities of a word processor apart from a word counter. There are rudimentary cut, copy and paste facilities, but with only one level of undo and no spellchecker many users will find it a harsh environment, particularly in contrast to the media-rich presentation elsewhere.

The content in Acid Rain, a topic in the Geography series, is well presented with animations and photographs but it is remarkably slight. It can be viewed in its entirety in 40 minutes, and takes only a little longer if all the drag-and-drop and quiz activities are completed.

Finally we looked at one of the titles in the English series, again for Key Stage 4. Explore, Imagine, Entertain explains different approaches to writing and also covers short-story writing. In each case a presentation gives advice and examples. Good use is made of interaction. As well as drag-and-drop techniques there are exercises that require the user to add punctuation, and you can compare your efforts with a model answer.

Rather disappointingly, in some instances there are no supplied responses. For example, in the redrafting section, you are advised to use more extensive vocabulary and figurative language, link sentences and avoid repetition, before doing an exercise to redraft a passage to make it more exciting. Having made the improvements to the text, it would have been nice to compare notes with an alternative version.

The Maze game quiz in the English title is also tedious. We'd sympathise with any pupil who found that the day's lessons involved multiple encounters with the titles in the Birchfield range.

✓ Interesting multimedia content; interactive exercises to reinforce learning

✗ Each title covers a highly specific topic, so schools need to buy many titles



Good use is made of graphics to aid understanding of Hinduism in the Religious Studies series

REQUIREMENTS Windows 95/98/Me/NT/2000/XP, Pentium II processor, 128MB RAM, 600MB disk space



REVIEW EDUCATION SOFTWARE

IMMERSIVE
EDUCATION
KarZouche

RATING ★★★★★

PRICE Schools £1,400 ex VAT

SUPPLIER Immersive Education 01865 811001

DETAILS www.immersiveeducation.com/uk

The KarZouche Secondary School Pack comprises the interactive multimedia authoring tool KarZouche Composer and one of its content library titles. Used on its own, KarZouche Composer enables pupils to engage in a wide range of creative activities including interactive role-play, picture-making, storyboarding, animation, publishing and movie-making.

Composer comes with resources such as backgrounds, characters, props, text, audio and a selection of step-by-step 'apprenticeship' activities. Its Education Support Pack, written by teachers, has activity suggestions, lesson ideas and units of work mapped to Curriculum Learning objectives. It is intended to help pupils make sense of information, articulate ideas and respond imaginatively. It can encourage them to reason, using methods of comparison, observation and prediction, and investigate multiple meanings and perspectives. It also aims to help students enhance their ICT skills and meet the needs of the Key Stage 3 strategy for ICT.

Teachers can also use any of the KarZouche content libraries, which are available in subject areas including history, literature and citizenship/personal, social and health education (PSHE) at a cost of £300 ex VAT each. Each title provides



relevant characters, backgrounds and other resource files, plus comprehensive teacher support materials.

Devising storyboards is an ideal way to become familiar with plays and their characters. We looked at the content library for Shakespeare's *Much Ado About Nothing*. Activities in this title analyse specific scenes, enabling pupils to develop their understanding of plot, themes, images, relationships and Shakespeare's skills as an author.

Storyboards are also useful as part of the history curriculum in encouraging students to show their understanding and ability to extract key information. Students can be asked to create a summary of a particular event or piece of text in a specified number of frames, or a summary with speech bubbles or captions containing important quotations. The activities provided in the module on the Normans start with 'Who Should Be King?' in which students watch a storyboard about the three main claimants to the English throne in 1066: Harold Godwin, William of Normandy and Harald Hardrada. After carrying out further research, using reference books and the internet, they complete a storyboard in which a modern character interviews the three candidates. Other activities cover the



The Normans content library can be used in Key Stage 3 History lessons

Bayeux Tapestry, the Domesday Survey and castles. The final activity is an odd-one-out quiz, the idea being that after pupils have tackled it they go on to devise their own quiz.

The religious studies curriculum at Key Stage 3 is about exploring themes and ideas that are often sensitive and potentially uncomfortable. Role-play allows students to rehearse situations, empathise with others and investigate issues in more depth. The KarZouche title Learning from Religion gives students the opportunity to investigate different faiths while considering their own beliefs. Its activities encourage students to analyse, interpret and evaluate religious issues and develop their own sense of identity and belonging as citizens at the same time as developing their understanding of unfamiliar religions.



Storyboard production is well suited to several curriculum subjects



Requires teachers and pupils to become familiar with novel environment

REQUIREMENTS PC: Windows 95/98/Me/NT/2000/XP, 300MHz Pentium processor. Mac: OS 9.0 upwards (inc OS X), PowerPC G4

REVIEW EDUCATION SOFTWARE

IMMERSIVE
EDUCATION
MediaStage

RATING ★★★★★

PRICE Schools from £350 ex VAT

SUPPLIER Immersive Education 01865 811001

DETAILS www.immersiveeducation.com/uk

MediaStage is a 3D animated learning environment designed for the GCSE Media Studies curriculum and is linked to a Key Stage 4 course published by Heinemann. It provides an exciting way for pupils to develop practical skills and demonstrate an understanding of theory. Students can choose from a range of supplied production sets or create their own using the generic spaces and props available.

There is a cast of actors for students to choose from. These can be placed within the set and then animated using a range of gesture and movement instructions. Students can make characters say their lines using text-to-speech technology, importing pre-recorded audio or using

the recording facility to record their own voices. Once the performance is ready students can set up cameras and lighting and then use the range of editing tools to record, play back and modify their performances. Students can bring 'real' video footage into their performances, and can also export their finished performances to videotape for more traditional editing.

The software has been designed to unlock the imagination and creative potential of teachers and students by combining the graphically rich features found in video games with those in the 3D movie-maker's production kit. It can enhance students' work by allowing them to create their ideal sets for a film project.

Often students are required to film in set locations (for example, the school grounds) and are frustrated by their inability to create professional-looking sets. With MediaStage this problem is overcome, and sets can also be lit. Even when students go on to film in a 'real' location, they can create a storyboard using still shots, which will greatly enhance the planning sections of any productions they undertake.

Unlike most educational software MediaStage needs powerful hardware. In particular it requires a reasonable amount of dedicated video memory



Let actors play out scenes and interviews for media studies

and the company recommends using either an ATI Radeon or nVidia GeForce 2-based graphics card. If your PC is more than two years old you might have to upgrade its graphics. This is the main downside to this innovative and motivating software.



Ideal resource for GCSE Media Studies



Needs a fast graphics card

REQUIREMENTS Windows 2000/XP, 1.5GHz or faster processor, 256MB RAM, GeForce or Radeon graphics card

REVIEW EDUCATION SOFTWARE

SHERSTON The Grammar Show

RATING ★★★★★

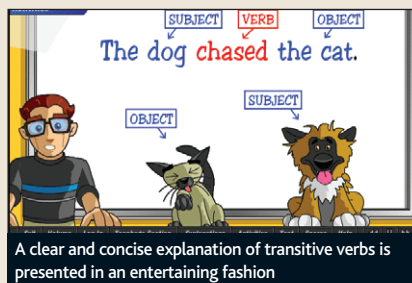
PRICE Schools from £50 ex VAT;
Home £20 inc VAT

SUPPLIER Sherston 01666 843200

DETAILS www.sherston.co.uk

This software combines clear explanations delivered in a well-paced and entertaining fashion with short test sessions and instant feedback. The software caters for multiple users and is particularly suitable for the Key Stage 3 age range (10 to 14). It includes a password-protected Teacher Section, which allows teachers to diagnose pupils' weaknesses and monitor the progress of individuals or the whole class.

A major strength of the software is that it uses diagnostic tests to determine which aspects of the topic need to be covered. This prevents children laboriously going over points they have already mastered. The software also deserves a high rating for the clarity of its explanations. The section on verbs, for example, deals succinctly with imperatives, infinitives, active and passive and transitive and intransitive forms. In all sections an Important Point icon flags key information. There are short interactive tests at the end of each section that give immediate feedback.



The activities are designed to appeal to children, but teachers and parents may feel that they are gimmicky and rather slight compared to the rest of the content. In all but one of the games all the player has to do is to distinguish between a right and wrong answer to a grammar question, so children are unlikely to be impressed as they don't require any computer game-playing skills.

There is enough information in this product, and in the titles on Spelling and Punctuation in the series, to recommend them for individual use, especially as the home user price of £20 including VAT is for all three titles together.

✓ Clear explanations of the finer points of English grammar

✗ Game content is disappointing

REQUIREMENTS PC: Windows 95 or later, 233MHz Pentium processor, 64MB RAM. **Mac:** OS X, 233MHz Power Mac G3, 32MB RAM

REVIEW EDUCATION SOFTWARE

GRANADA LEARNING Young Writers' Workshop

RATING ★★★

PRICE Schools £49 ex VAT; Home £20 inc VAT

SUPPLIER www.onestopeducation.co.ukDETAILS www.granada-learning.com

Young Writers' Workshop sets writing challenges to students at Key Stages 3 and 4, requiring them to tailor articles for television, radio, newspaper and magazines. It includes a narrated tutorial for first-time users but this is rather repetitive and includes references to the program's website, which is no longer available. This is just one of the signs that this software is not new – other clues include photos that show young people using phones with cords.

The main menu divides assignments into two types: Newsgroup covers factual writing, while Writer's Block asks pupils to use their imaginations. In both categories users write for broadcast media and record their scripts. For would-be news reporters, Sound Bytes has a choice of topics for writing a short radio presentation. Having written the script, pupils record it using an autotune. In Video Shorts pupils write a narrative script to match supplied news clips. Radio Activity is the high point of the imaginative menu, with tasks that include writing adverts for radio programmes and conducting interviews. The TV task is to select pictures and write captions for a storyboard.

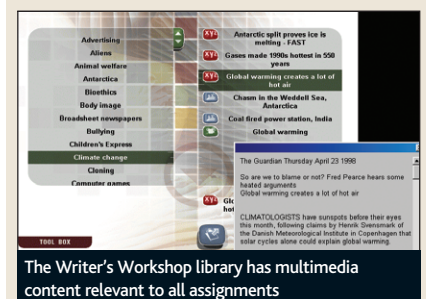
The remaining activities are marred by their reliance on a primitive HTML editor. The tasks themselves, however, are interesting. The program's Toolbox gives you access to Study Tips, which offer advice on how to write for different media, and to a Library containing background material relevant to all the assignments. Users are also encouraged to use the internet.

This software deserves to be brought into the 21st century by the addition of up-to-date resources and a new website. Meanwhile, we can award it only a three-star rating. **CS**

✓ Sets interesting writing challenges

✗ Seems very dated; no longer has website support

REQUIREMENTS Windows 95/98/Me/2000/XP, 200MHz Pentium processor, 64MB RAM, DirectX



The Writer's Workshop library has multimedia content relevant to all assignments

REVIEW EDUCATION SOFTWARE

CREATIVITY SOFTWARE Story Wizard

RATING ★★★★★

PRICE Home £15 inc VAT

DETAILS www.storywizard.co.uk

Story Wizard provides help with structure and characterisation as well as lots of motivation

"Reading is fun but writing is even more fun because you can invent everything!" This advice is from Story Wizard, the latest program from Creativity Software, the publishers of New Novelist. You don't have to look very far to notice that Story Wizard has a lot in common with its creative writing title for adults, including lots of enthusiasm and motivation. It provides a stimulating environment in which to write stories, including a full dictionary and thesaurus as well as an automatic spellchecker, and there's help at hand when users try to decide where to start or what to write next. It even helps with fictitious names, offering a billion name combinations for convincing characters, and has a place name database covering the whole world.

Although the software doesn't write the words for you, its templates provide structure and guidance. To start you choose a type of story and give it a working title. You also need to decide on its size: short, with three phases, beginning middle and end; medium, with six episodes giving scope for development; or long, with 12 chapters.

Story Wizard then focuses on characters, encouraging users to think about the role they play in the story and about their defining characteristics. It also pays attention to location and themes; indeed, to all the ingredients of a well-crafted story. One of its helpful features is a link to the Microsoft speech engine to read aloud what has been written on the screen, although to use this feature you need Windows XP. Finally, when you want to publish your work it provides facilities to design the front cover.

Story Wizard is motivating and fun and earns a Best Budget Buy award. It's suitable for use at Key Stages 2, 3 and 4, is ideal for home users but also deserves a place in the classroom.

✓ You'll never be short of ideas for what to write

✗ Risk of producing formulaic stories

REQUIREMENTS Windows 98/NT/XP, 800MHz Pentium III processor, 64MB RAM, 60MB disk space